

Leaptronix

User's Manual

AH-160 Series [Machine / Software]



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Chapter 1 Product Description

1-1 Product Description

LEAP ELECTRONIC CO., LTD (LEAP), has been committed to the IC programming service since 1980. To provide customer from personal device to factory automated equipment programming solution

Due to present automated programming machine is quite large and complex. To shorten programming various IC waiting time. We, LEAP specially launch small semi-automated IC programmer- AH160 to meet customer's demand for automated programming of large capacity FLASH components. You can use this in factory or office environment. In fact, AH160 is the most extra value product because of its characteristics of high efficiency, high-quality, space-saving, and low build cost. It has extraordinary performance advantage especially for some disk mounted ICs that took long time to program, such as TSOP48 and TSOP56.

1-2 Safety Precautions

All operation, maintenance and repair need to follow below safety precautions. We do not take responsibility if users do not follow these precautions and caused unexpected problems.

- Make sure the internal parts are locked and fixed and remove all the connecting wires before moving the product,.
- Please use the standard accessories and software while using the product.
- Do not operate this product beside flammable gas, flam, or in hot and humid environment.
- Make sure all the screws, tools are placed properly and do not left them inside while using the product.
- Please try to avoid using old IC to program, it may cause low yield rate or failed.
- Please turn off the power while removing and replacing the component in case of electric shock.
- Do not remove and replace the non-wear and non-replace components.
- The sockets or any IC package adaptors of this product are consumable. The usage life is based on different sockets and adaptors. If you use it for too long, the sockets may have bad contact and cause low programming yield rate or even programming failure.
- While using this product to program master tape which is used before mass production, please do the complete testing and use it after confirmation.

- Please contact with our professional technical personnel or distributor if the device is out of order , do not repair it by yourself.
- This description is only for buyers reference and preservation. Product specifications and instructions change without another notice.

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1-3 Product appearance and Accessories



- AH-160 Main unit x1
- CD x1
- USB Cable x1
- AC Power Cord x1
- Socket Board (Determined by demand and shipment amounts)

1-4 Specification

Item	Spec
UPH	550 U.P.H. (Mechanical action)
Repeatable Resolution	X axis +- 0.03mm, Y axis +-0.03mm, Z axis +- 0.2mm, Bar axis +-0.01mm
Stroke	X axis 400mm, Y axis 310mm, Z axis 18mm, Bar axis 5mm
Position System	Precissor , 30X30mm
Programming System	4 set High Speed Gang Programmer
Socket Site	4~16 sockets
Devices supported	NOR Flash, NAND Flash, EEPROM
File formats supported	Binary/Machine Code, Intel HEX, TEK HEX, Motorola HEX...
TRAY Input / Output	JEDEC standard
Input voltage	AC110~240V, 50~60Hz, Single-phase, 3-wires
Power consumption	200W
Dimensions	520(H) × 700(L) × 550(W)mm
Net weight	40KG
Operating temperature	+5 °C+45°C
Operating humidity	20%~90%, No condensation

1-5 Operating system, hardware requirement

Item	Spec
OS	Windows XP / Vista / Windows 7 (32bits / 64bits)
CPU	Intel Core 2 Due or above
Memory	1 GB RAM above
Hard disk:	500 MB above/ buffer: 1GB above
Display:	1024 × 768 Pixels above
Communication:	USB 2.0 High Speed

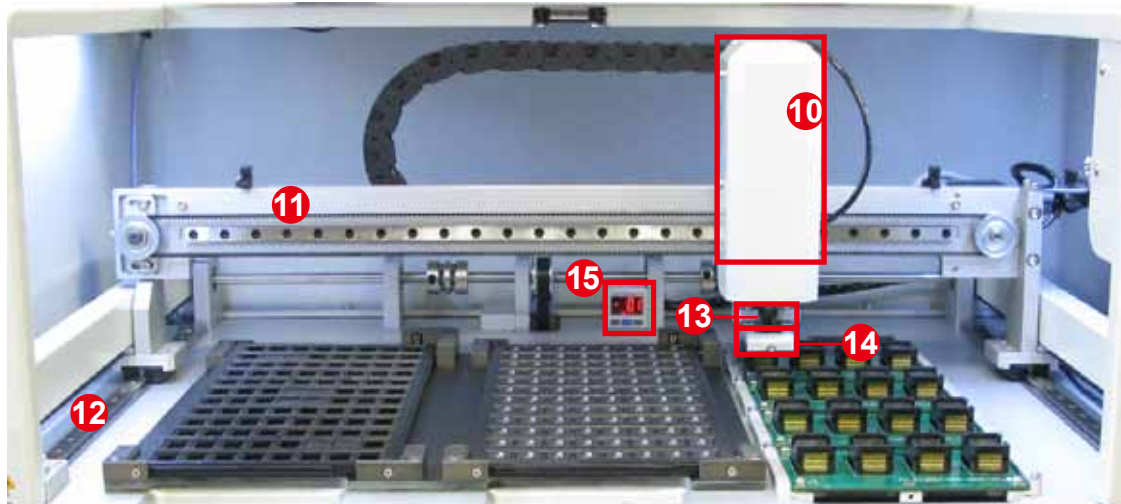
Chapter 2 Name of Each Component



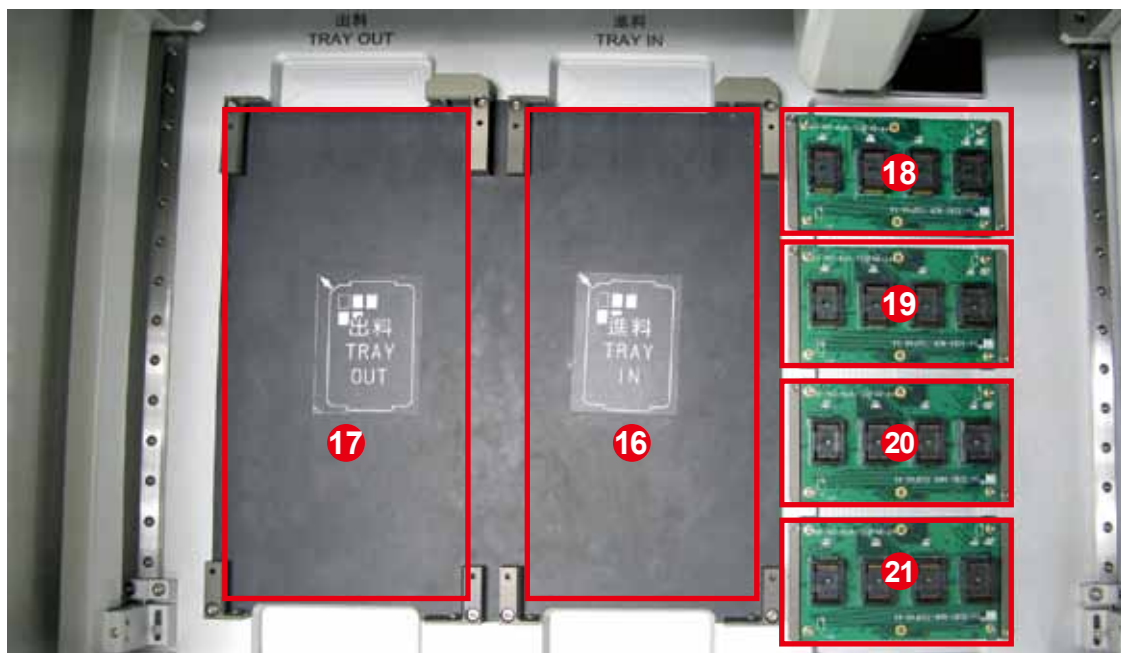
1. Indicator Lamp
2. Emergency Stop Switch
3. Cabin Door Handle
4. Cabin Door



5. ID Sticker
6. Power Switch
7. Fuse
8. AC Power Socket
9. USB Socket



- 10. Z-Axis
- 11. X-Axis
- 12. Y-Axi
- 13. Vacuum Nozzle
- 14. Bar-Axis
- 15. Vacuum Sensor



- 16. Import Tray
- 17. Export Tray
- 18. Programmer 1
- 19. Programmer 2
- 20. Programmer 3
- 21. Programmer 4

Chapter 3 Installation

3-1 Preparation work

- Phillips screwdriver 1
- Hex wrench 1
- Computer 1

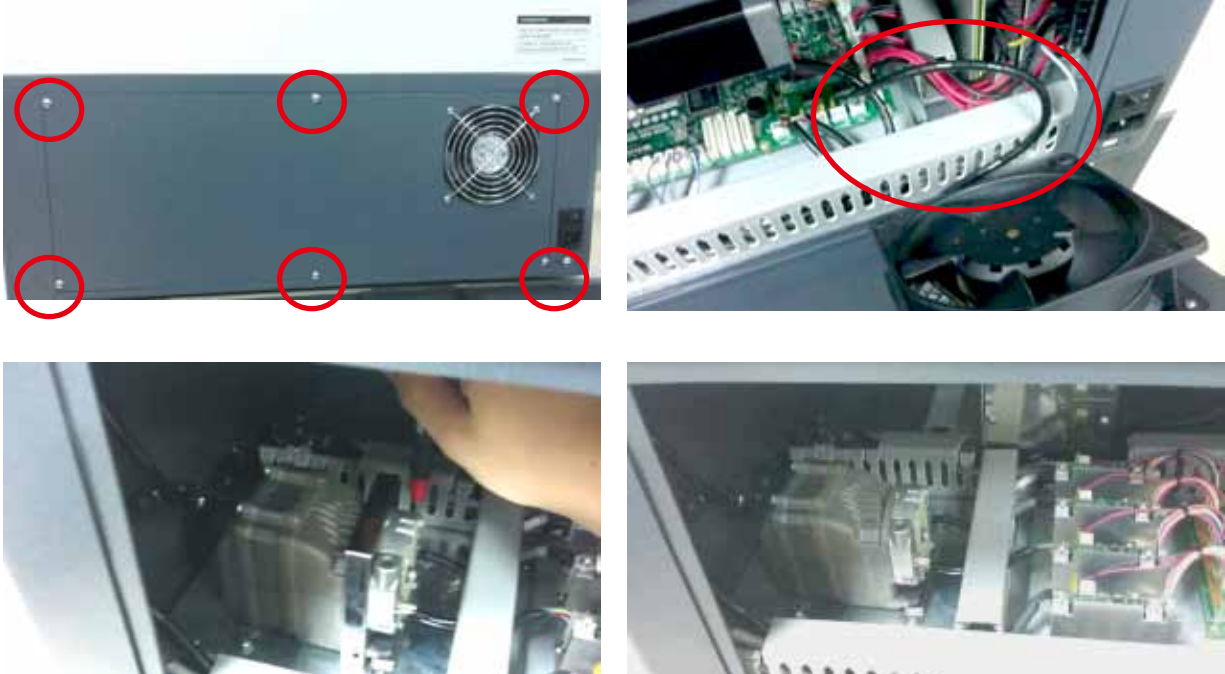
3-2 Firmware Installation

Before installation, please remove the retaining pins completely. Make sure the operation of the equipment would not cause collision.

If you need to storage or move this product, please lock the cable tie after turning the power off to avoid damage caused while moving it.



Remove the retaining pins of the device cabin and take care of it. The retaining pins are respectively installed in the rear on both sides of the Y-axis and X-axis. Please see the red circle on the image below.



1. Please remove the fixed tab on the pump and remove six Philips screws on the rear side of the machine and do not touch the fan wire. Remove two screws from the retaining plate of pump and then take off the retaining plate, as shown as the image below. Put it back after completing the installation
2. Use standard USB cable which comes with the product, and connect USB to your PC. Please remove any USB flash drive on your PC to avoid disturbing operation.
3. Use standard AC power cable which comes with the product, and check the socket type. The machine uses single-phase three wire system 220V and 110V power supply , and Frequency 50-60Hz AC power.

3-3 Software Installation

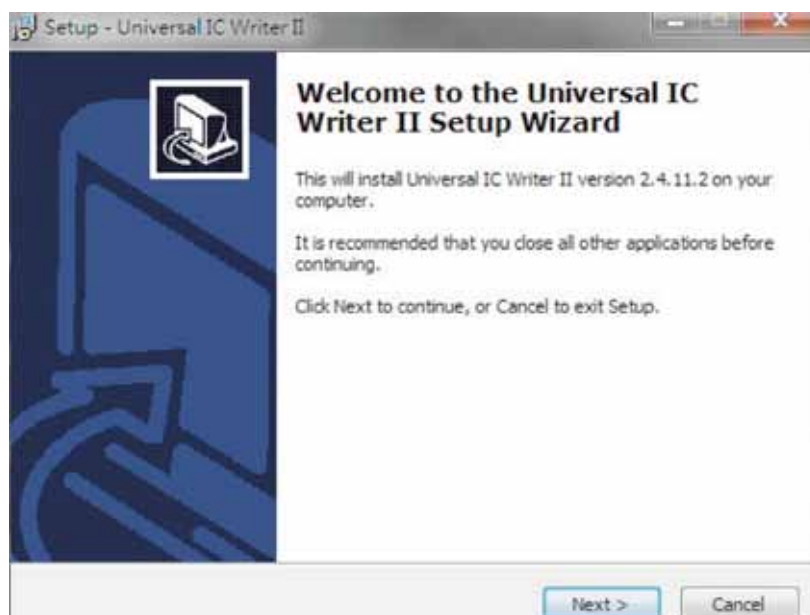
Before installation, please note that the OS may need the permission of the administrator. Please confirm the administrator for permission.

Insert CD into the PC and wait for some time. The installation window will pop up automatically. If not, please go to "My Computer" and select your CD-ROM drive then run AUTORUN.EXE.

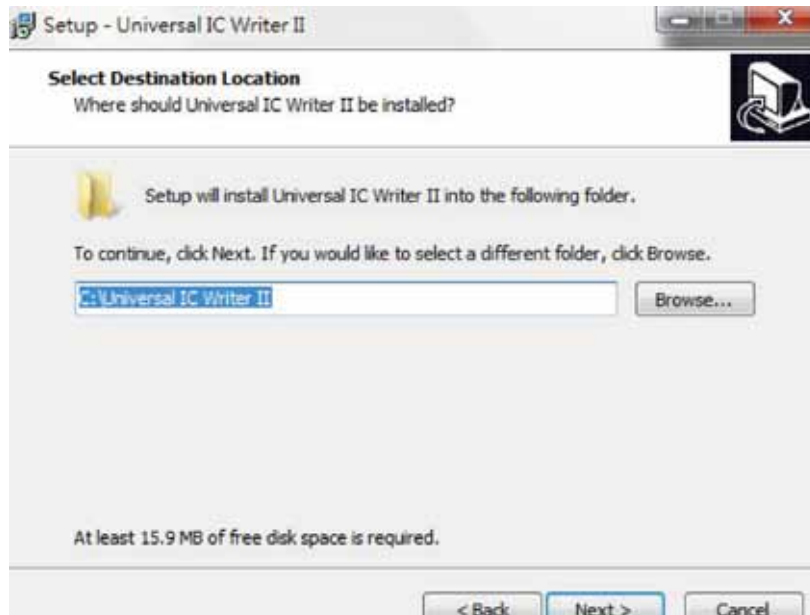


3-3-1 Software and Database Installation

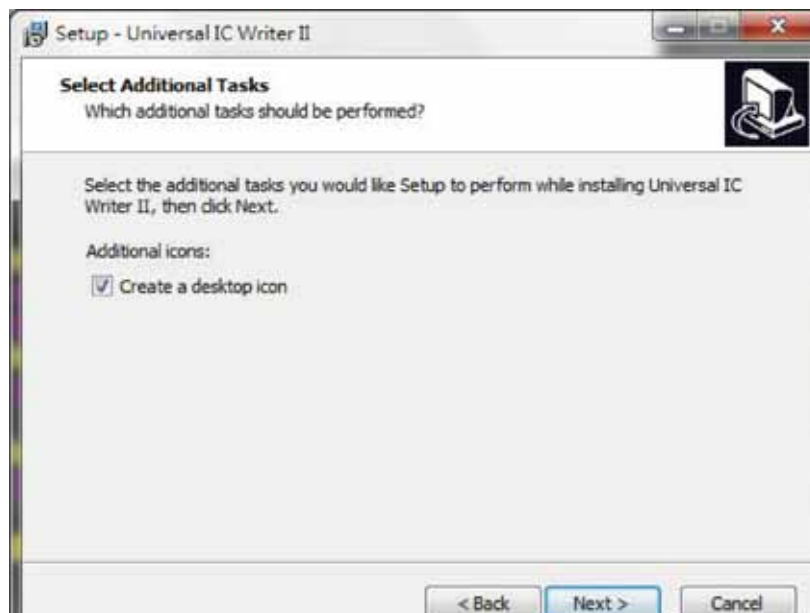
1. Click the "Install Software and DataBase" on the installation window and enter the Setup Wizard, and then click "Next" to the next step.



2. Confirm the installation path of entering. The default path is – “C:\Universal IC Writer II:”, and then click “Next” to the next step.



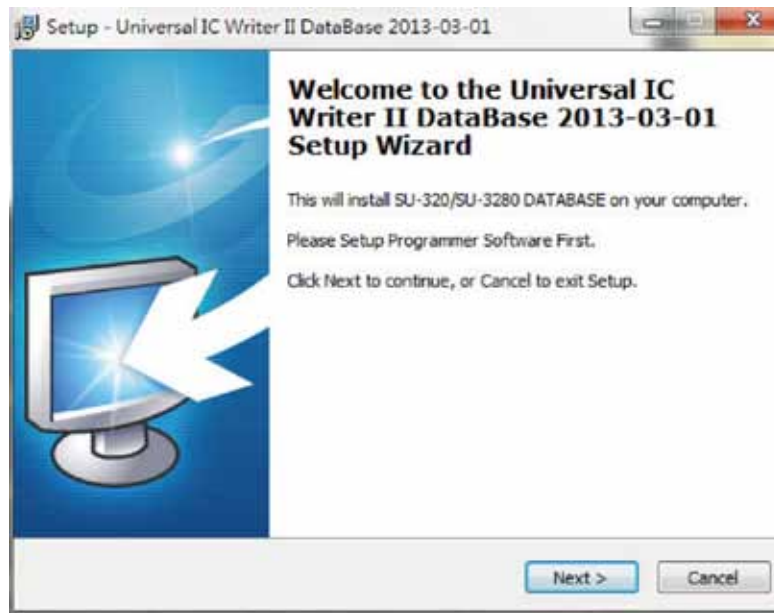
3. Confirm whether you want to add shortcut icon on the desktop, and then click “Next” to the next step.



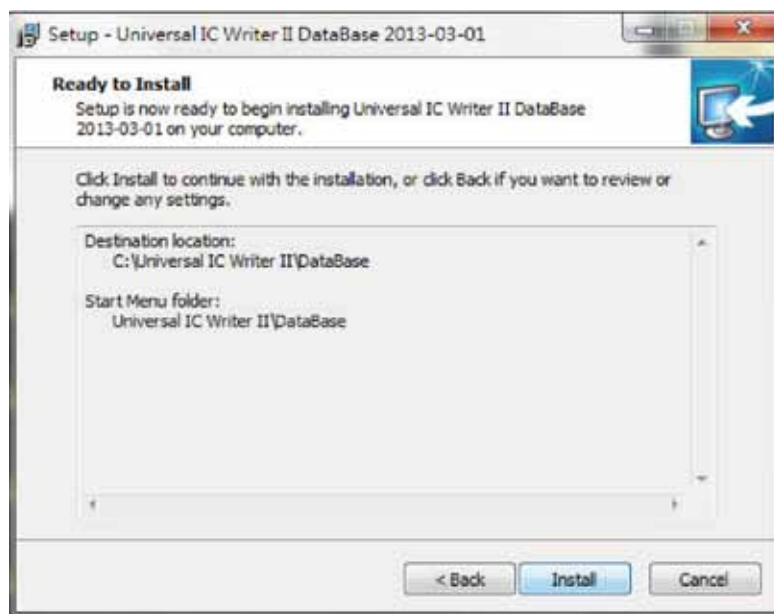
4. Confirm all the previous instructions are correct and then click “Install”. Finally, click “Finish” to complete the software installation.



5. After completing the software installation, the database installation window will show up. Click "Next" to the next step or click "Cancel" and go to our website (<http://www.leap.com.tw>) to download the latest database for installation.



6. Confirm all the previous instructions are correct and then click "Install". Finally, press "Finish" to complete database installation.



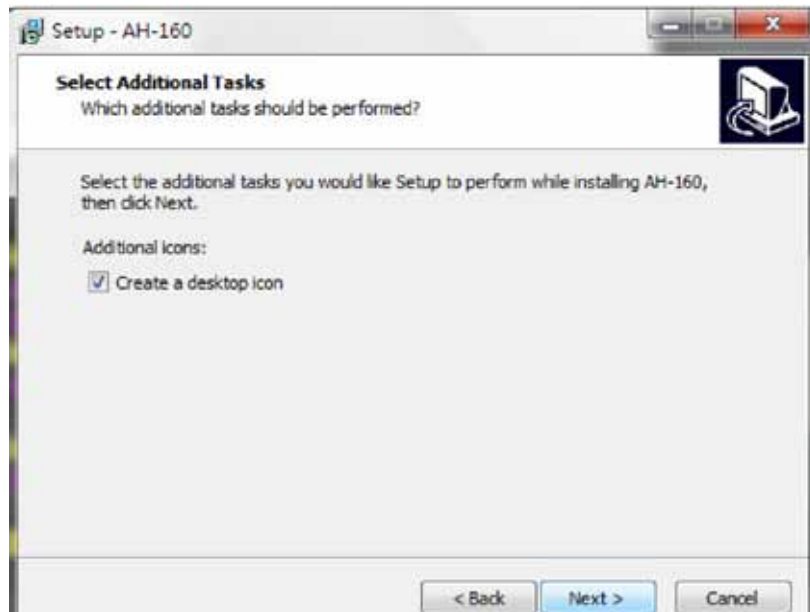


3-3-2 AH-160 Software Installation

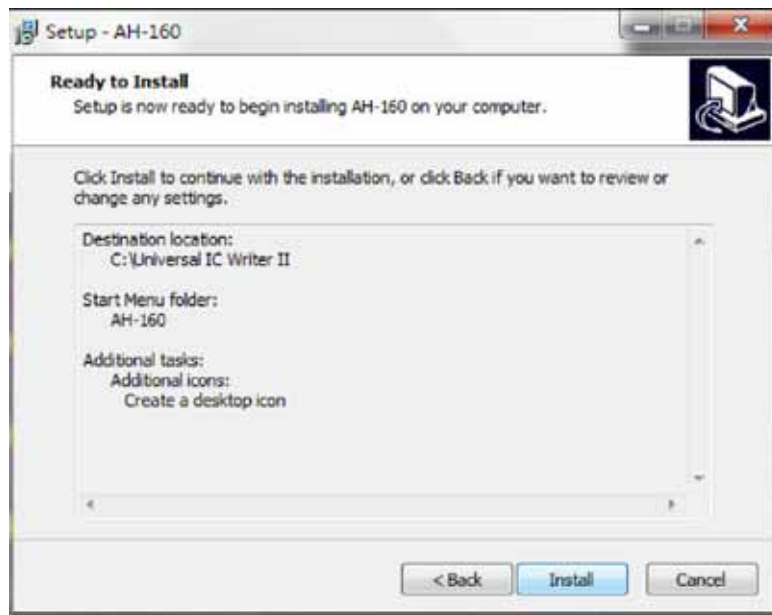
1. Click the "Install AH-160 Software" on the installation window and go to the AH-160 Setup Wizard. Click "Next" to the next step.



2. Confirm whether you want to add shortcut icon on the desktop, and then click “next” to the next step.

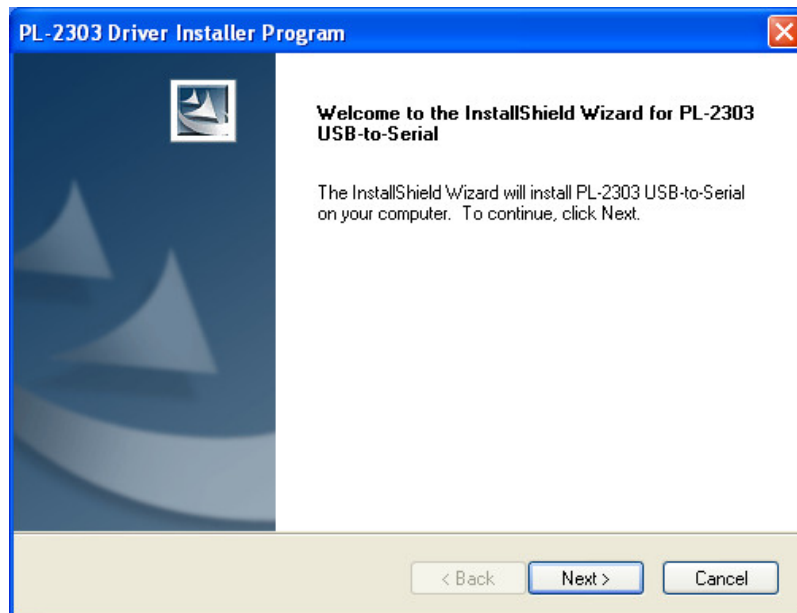


3. Confirm all the previous instructions are correct and then click “Install” for installation. Finally, press “Finish” to complete AH-160 software installation.

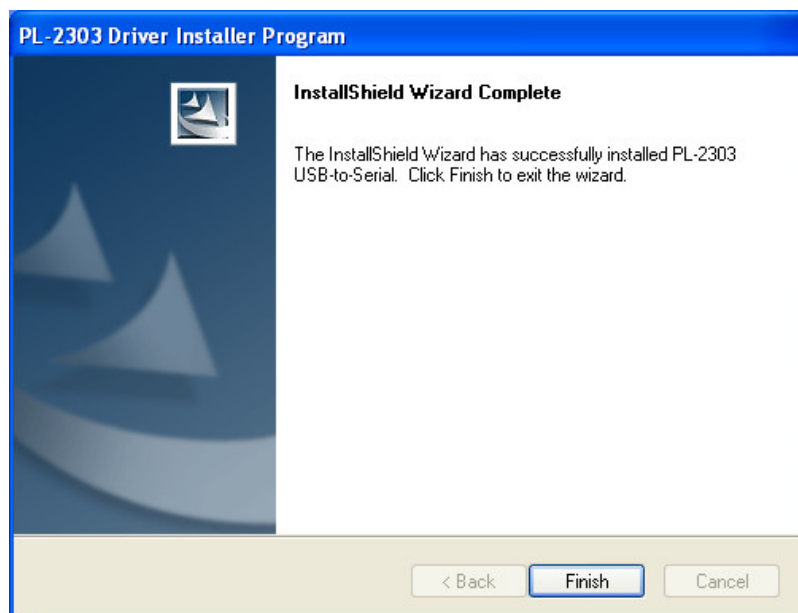


3-3-3 AH-160 Driver Installation

1. Click "Install AH-160 Driver" on the installation window and enter AH-160 Driver Installation Program. Click "Next" to continue.

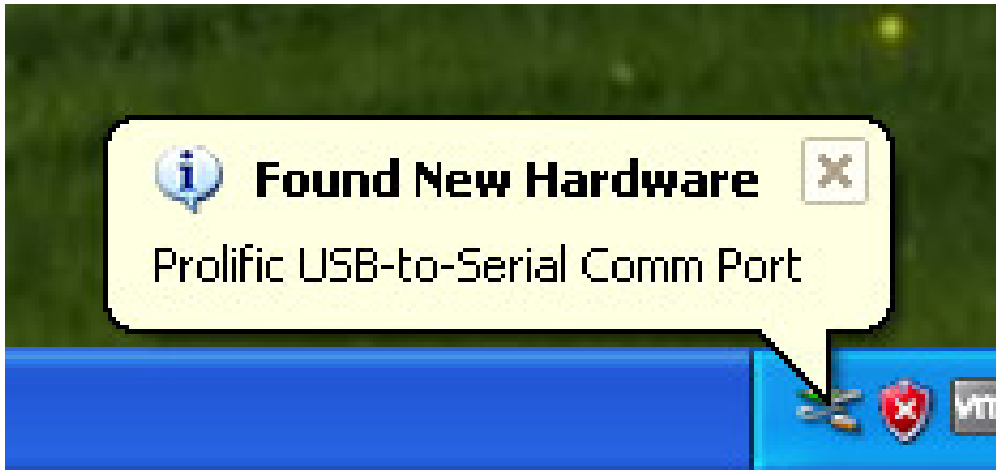


2. Finally click "Finish" to complete the installation.



3-4 Initial Connection of the Device

Connect the USB 2.0 cable which comes with the product to computer and turn on the power switch that is on the rear side of the device. A message will show on the computer monitor as shown as the image below.(Take Windows XP for example.)



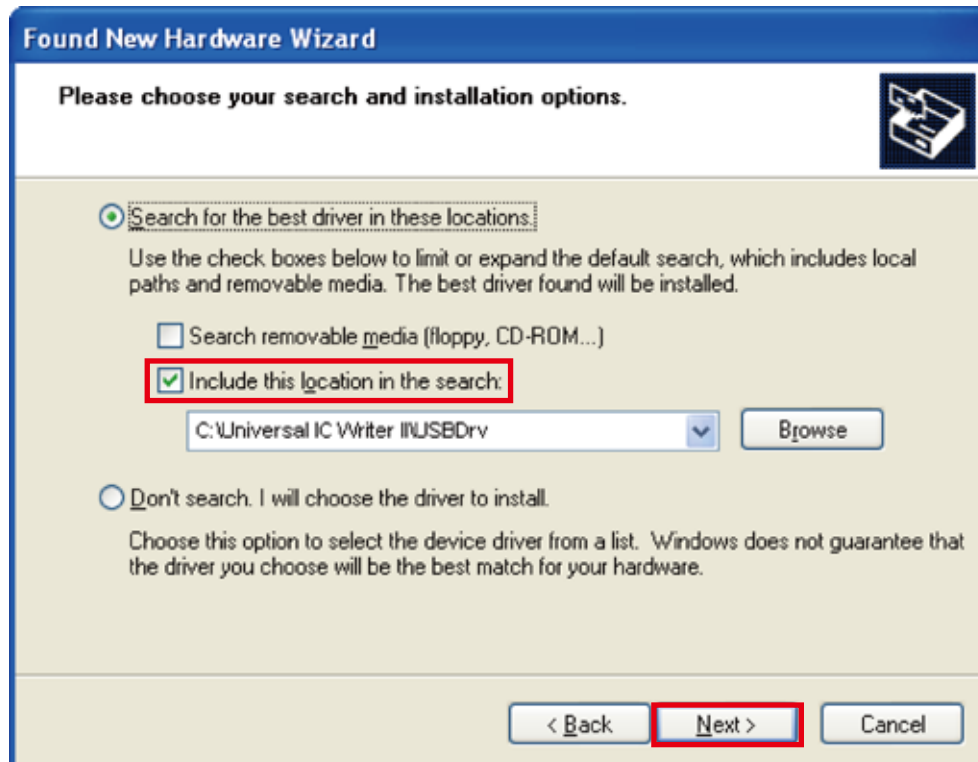
If the installation is success, please click “Start” →”Control Pannel” →”System” →”Device Manager” and there is a selection ”Prolific USB-to-Serial Comm Port” as shown as the image below. Please remember the device number in the parentheses, it is the set number that connected AH-160 software with device.(COM5 is only an example number in this case.)



Then it will automatically prompt "Found New Hardware" on the task bar, and you can follow the instructions to install the hardware and driver.



If the operating system can not complete installation automatically, you have to manually set the installation route to [C:\Universal IC Writer II\USBDrv] during the process.



After installation is completed, 4 sets of “Universal IC Writer II” devices will show on device manager (“Start” → “Control Pannel” → “System” → “Device Manager”) At this time, AH-160 device settings is completed.

3-5 Initial Start up of the software

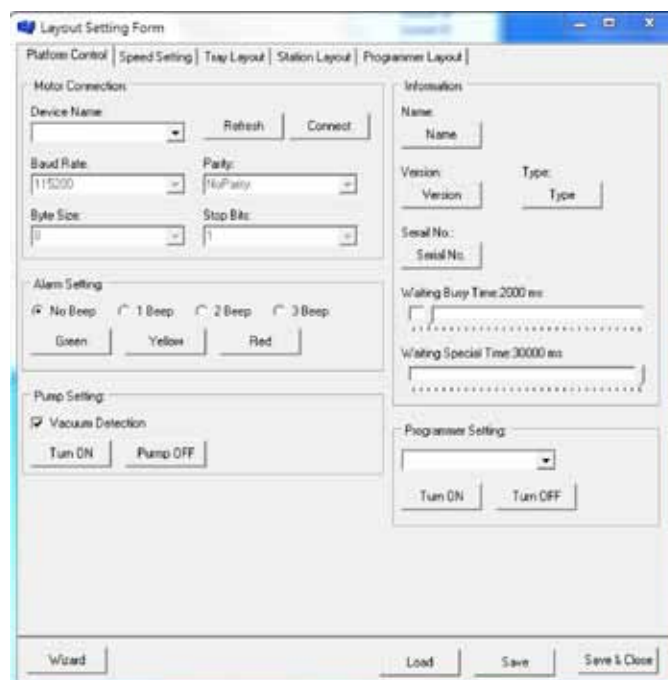
1. Start up AH-160 software, double- click the AH-160 icon on your computer or click the left button of mouse and choose "Start" → "All programs" → "AH-160".



2. While first starting up the program, the Error Message will show on. Please click the "Retry" button to enter the setup window and select the connection device.

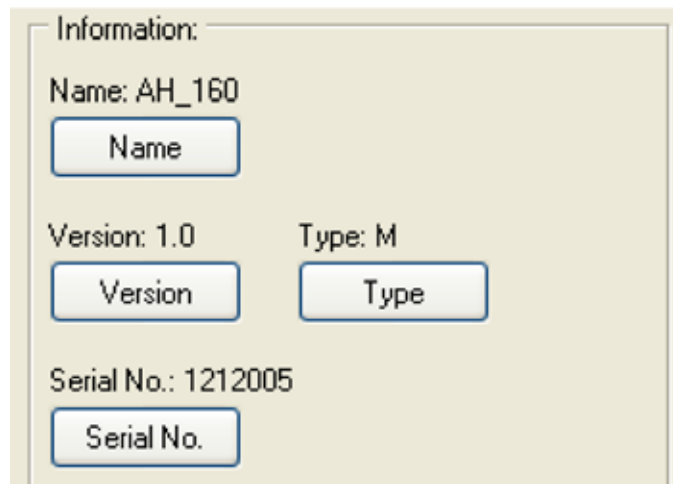


3. Click "Platform Control" on the setup window and choose "Motor Connection". Connection numbers of the device are on the "Device Name" drop-down menu. You can click the "Refresh" button to refresh menu connection number, and click the connection number of the drop-down menu.(Number COM5 is an example in



this case.)Then click “Connect” to connect to the device.

4. If the connection is work, The "Information" on the right half of the window will show the details of the device response, including "Name", "Version", "Type" and "Serial No", as shown as the image below.



5. Then you can click the "Save & Close" bottom to exit and go back to the AH-160 main window. As shown as the image below.



Chapter 4 Installation and Replacement of Each Component

In this chapter, we are going to demonstrate how to install the Vacuum Nozzle, Bar-axis and Location Notch. If you need to replace the components, please do the reverse operation.

Note : Please turn off the power supply before you install or replace each component.

4-1 Installation and Replacement of Vacuum Nozzle

1. Open the cabin door and pull up the mechanical arm to the Import Tray nearby, as shown as the image below. Note: To avoid the risk, you have to push the cabin door to bottom every time you open it, and make sure it would not fall by gravity.



2. Install the Vacuum Nozzle from bottom to top vertically of Vacuum Nozzle Rod, until both side of Nozzle Rod Spring grip and fix the Vacuum Nozzle. Note: Inclined surface side of Vacuum Nozzle must be on same direction with Nozzle Rod Spring.



4-2 Installation and Replacement of Bar-axis

1. Use hex wrench for rotating and removing the screws from the Bar-axis.



2. Slide the Bar-axis into the side of device and push it to the correct location.
Then lock the screws and fasten the Bar-axis.



4-3 Installation and Replacement of the Location Preprocessor

1. Firstly, use hex wrench for rotating and removing the screws from Location Notch



2. Secondly, align the Location Notch Hole (at bottom of the Location Notch) with the Location Pin (on the plane), and then install it from bottom to top vertically. Thirdly, lock the screws. If you need to remove the location notch, please remove it parallel.

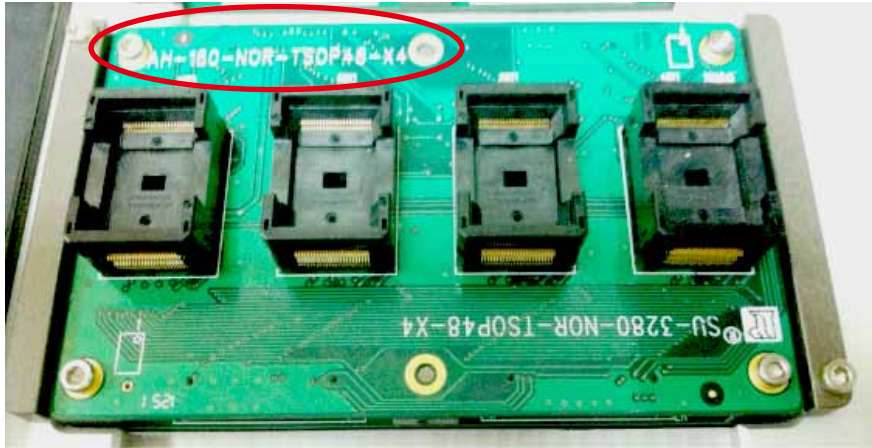
Note: Please make sure Location Notch, socket and the programming ICs are in same specification.



4-4 Installation and Replacement of Socket Board

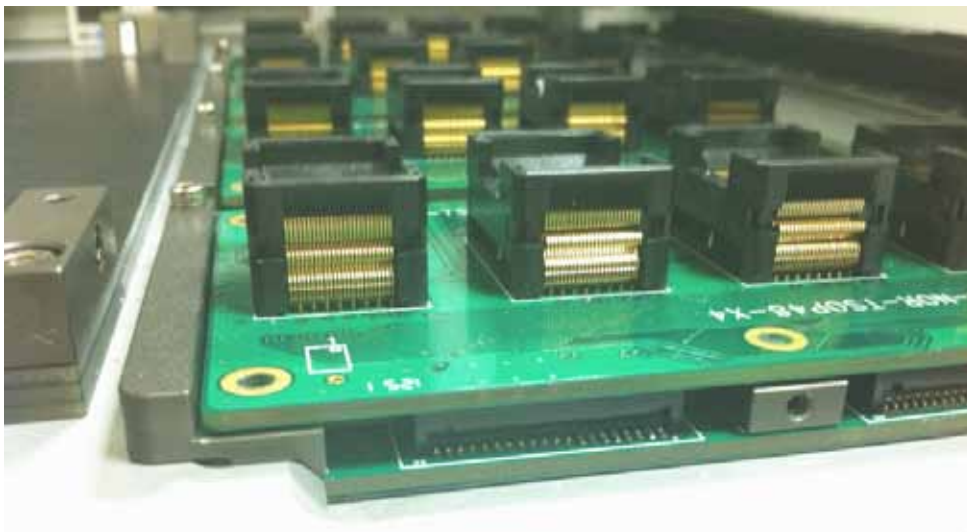
1. Firstly, remove the screws from the socket board, as shown as the red circle on the image below.





2. Secondly, install the socket board. Make sure the side with the letters AH-160 is upside, and then install socket board vertically. Finally, make sure the socket board are against the holder lock and then lock the screws.

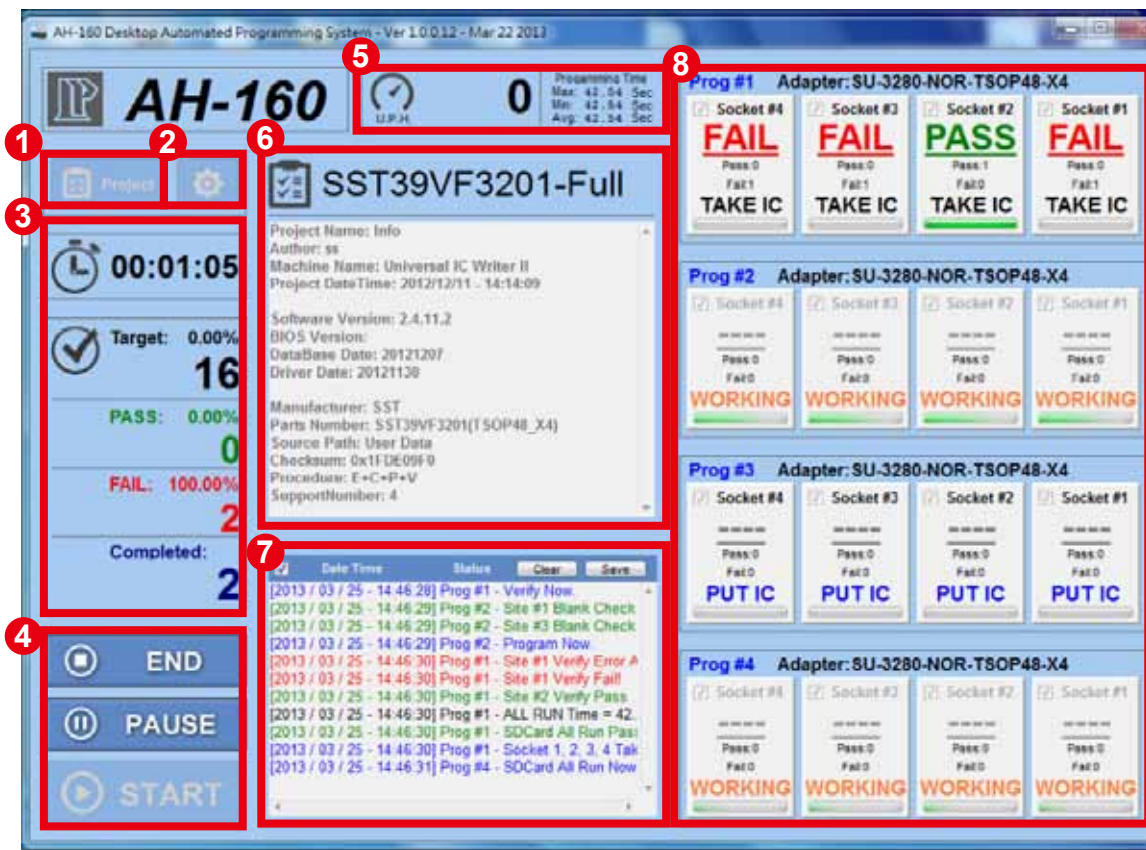
Note: Socket Board has to be against the holder plane. Please make sure location notch, socket and the programming ICs are in same specification. Socket Board is fool- proofing. If you can not install it successfully, please make sure the direction is right and the hardware is not damaged.



Chapter5 Software Introduction

5-1 Introduction of Software Main Screen


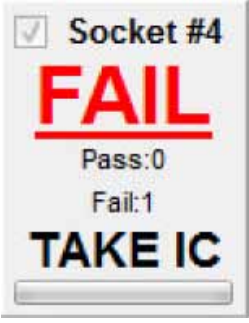
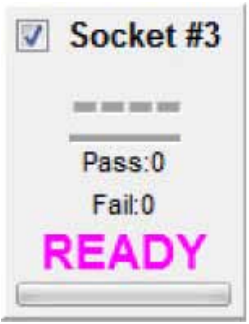
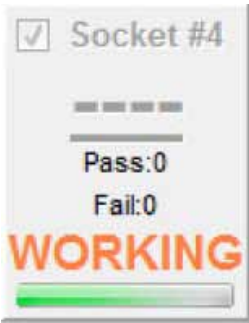
AH-160 software main screen is the main interface for the user. You can use it for entering, operating and monitoring the work order and sockets, opening and closing sockets, displaying and recording the status messages of the device, and assessing the device performance (Unit Per Hour,U.P.H.) .It is divided into 8 parts for introduction



as shown as the image below.

1. Project : Open the project window to add, delete and load the project.
2. Option : To open programmer's option and setting screen.
3. Information Display : To show the information of Target, Pass, Fail, Completed and Current programming quantity.
4. Control : To control the machine action: End, Pause and Start. The Spacebar on the keyboard can be used as control the machine pause.
5. UPH : To show machines programming UPH(Unit Per Hour) and Maximum, Minimum, Average programming time.
6. Work order information display : To show current project information.
7. LOG display : To display LOG information such as programming status
8. Socket display : To decide whether each socket should be opened or closed, and

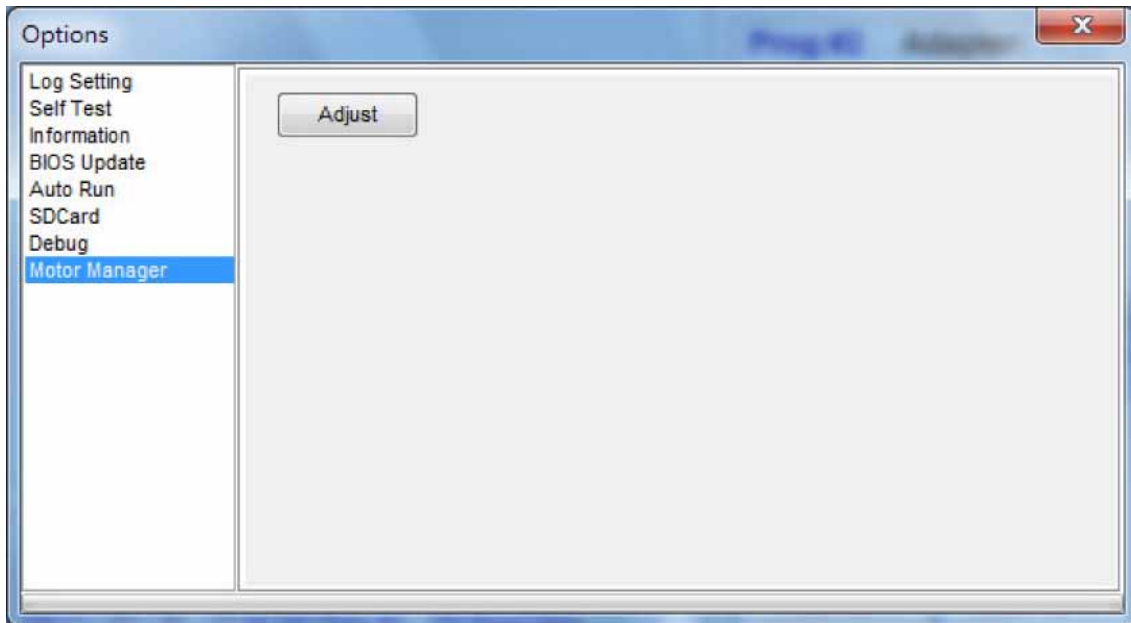
display the socket status, then record the PASS and FAIL amounts of it. As shown as the image below :

Socket message	Description
	<p>The loading is success. The IC programming is success.</p>
	<p>The loading is failed. The IC programming is failed.</p>
	<p>It is standby.</p>
	<p>It is loading now. The IC is programming.</p>

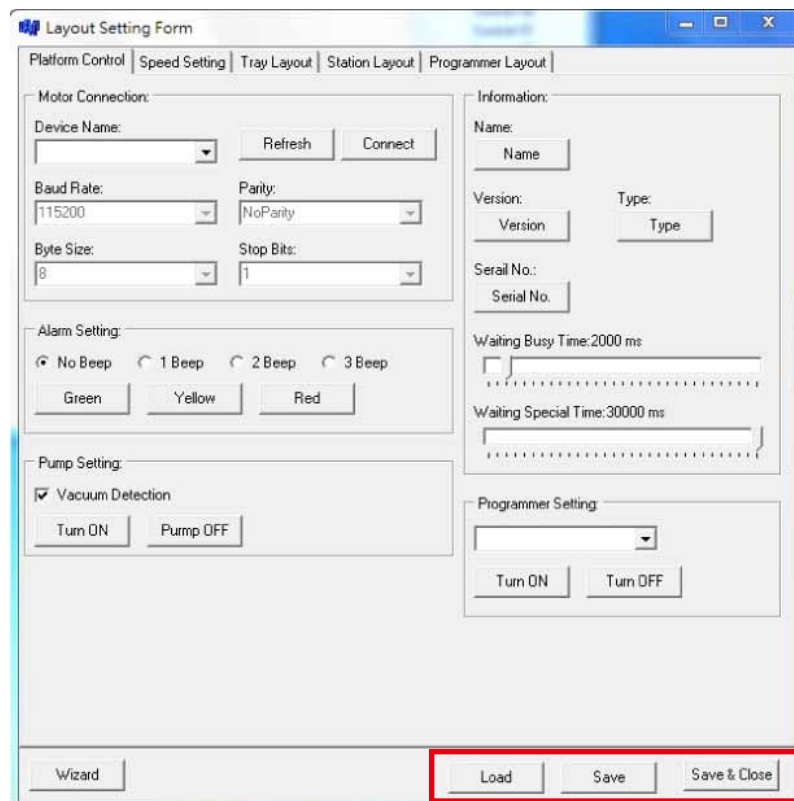
5-2 Introduction of Set up Window

1. Click  , and it will show the set up window.

The mechanical arm will start initialization if the window pops up in connected status.



2. Choose “Motor Manager”, and click “Adjust”. Then it will show connection and set up windows.



You can load, save ,and save and close by click these keys.

5-2-1 Platform Control

There are Motor Connection, Alarm Setting , Information, Pump Setting and Programmer Setting on platform control window.

The screenshot shows the 'Layout Setting Form' window with the 'Platform Control' tab selected. The window is divided into several sections, each with a red box and a number indicating its function:

- 1. Motor Connection:** Includes fields for Device Name, Baud Rate (115200), Parity (NoParity), Byte Size (8), and Stop Bits (1). Buttons for Refresh and Connect are also present.
- 2. Alarm Setting:** Includes radio buttons for No Beep, 1 Beep, 2 Beep, and 3 Beep, and buttons for Green, Yellow, and Red.
- 3. Pump Setting:** Includes a checked checkbox for Vacuum Detection and buttons for Turn ON and Pump OFF.
- 4. Information:** Includes fields for Name, Version, Type, Serial No., Waiting Busy Time (2000 ms), and Waiting Special Time (30000 ms).
- 5. Programmer Setting:** Includes a dropdown menu and buttons for Turn ON and Turn OFF.

At the bottom of the window, there are buttons for Wizard, Load, Save, and Save & Close.

1. Motor Connection : Set and choose the “Device Name” (Depend on port of user’s computer) , Baud Rate (Default Value : 115200bps), Parity (Default Value : NoParity) , Byte Size (Default Value: 8 byte) and Stop Bits (Default Value : 1 bit)
2. Alarm Setting : To test the light and alarm of the Indicator Lamp, including red, yellow and green lights. You can choose 1 bee to 3 bee or no beep of the alarm.
3. Information : The information of Name,Version,Type and Serial Number.
4. Pump Setting : To turn on or turn off the pump power and the Vacuum Sensor.
5. Programmer Setting : To choose the code number of programmers and turn on or turn off.

5-2-2 Tray Layout

To set the position and parameters of Tray. It is divide into 10 parts as shown as the image below.

The screenshot shows the 'Layout Setting Form' with the 'Tray Layout' tab selected. The form is divided into 10 numbered sections:

- 1. Tray Layout: Row (12), Column (8)
- 2. Waiting Time: 60 ms
- 3. Release Shift: 50 pulses
- 4. Export Tray Position: First X: 17420, First Y: 2045, Last X: 13150, Last Y: 11857, Route Z: 380
- 5. Import Tray Position: First X: 10400, First Y: 2045, Last X: 6102, Last Y: 11857, Route Z: 380
- 6. Emergency
- 7. Servo On/Off
- 8. Vacuum
- 9. Initialize
- 10. Position Control: To Home, To Here, and coordinate fields (e.g., << -1000, +1000 >>)

1. Tray Layout : To set arrangement, such as Column and Row.
2. Waiting Time : To Set the waiting time for Vacuum Nozzle when IC is released.
3. Release Shift : To adjust the height so that mechanical arm can release IC. The computing method : Use the nozzle stroke to minus the pulse number on this field.
4. Export Tray Position : To set the position of the first IC and the last IC of Export Tray. To suck the operating stroke of IC by Z-axis. (The units are pulse wave numbers.)
5. Import Tray : To set the position of the first IC and the last IC of Import tray. To suck the operating stroke of IC by Z-axis. (The units are pulse wave numbers.)
6. Emergency : To stop the axis of mechanical arm in emergency.
7. Excitation Control : Select the coordinate fields on zone 4 and zone 5 and then do the corresponding control.
8. Move the adjust button : To control the movement of each axis motor . Choose coordinate field on zone 4 and zone 5, and press $\pm 1, \pm 10, \pm 100$ and 1000 for corresponding movement.
9. Vacuum Operation : To turn on or off the vacuum.
10. Position Control : Control the corresponding motor for doing different function. Press "Initialize" so that each motor of axis will initialize, and all motors will initialize if you don't choose the corresponding field. Click "To Home" to drive selected

motor back to the starting location, and click “To Here” to drive the selected motor to record location on the field.

5-2-3 Station Layout

To set the position and each parameter of precissor and failed zone

The screenshot shows the 'Layout Setting Form' with the 'Station Layout' tab selected. The form is divided into two main sections: 'Failed Zone Position' and 'Precissor Position'. The 'Failed Zone Position' section includes a 3D model of a box, input fields for Offset X (300), Offset Y (265), and Route Z (600), a Max. Limit (0: Ignore) field (10), and a checkbox for 'Zone 2 Enabled' which is checked. The 'Precissor Position' section includes a 3D model of a component, input fields for Offset X (3200), Offset Y (265), and Offset Z (500), a Waiting Time field (140 ms), and a Release Shift field (-100 pulses). To the right of these sections are buttons for 'Servo ON', 'Servo OFF', 'Emergency', 'Vacuum', 'Initialize', 'To Home', and 'To Here'. At the bottom are buttons for 'Wizard', 'Load', 'Save', and 'Save & Close'. Red boxes and numbers 1 and 2 highlight the 'Failed Zone Position' and 'Precissor Position' sections respectively.

1. Failed Zone Position : 1.To set the Failed Zone Position and maximum of IC deposition. 2. To divide failed zone into two sections for IC deposition.
2. Precissor Position : 1.To set precissor position and parameters.2. To turn on or turn off the precissor position (Depend on whether the IC should be calibrated or not). 3. To set the release height and time for IC.

5-2-4 Programmer Layout

To set each programmer, socket position and parameter.


1. Programmer selection : and the information will show on part2 and part5.
2. Socket Per Programmer: Set socket amount for each programmer (From 1~4 set).
3. Waiting time: Set the waiting time for releasing IC.
4. Release Shift: To set IC release height. The computing method : Use the nozzle stroke to minus the pulse number on this field.
5. Socket Setting : Set each socket position and movement of each axis.

Chapter 6 The Procedure of Adjusting AH-160

6-1 Confirm the Device Reference Point

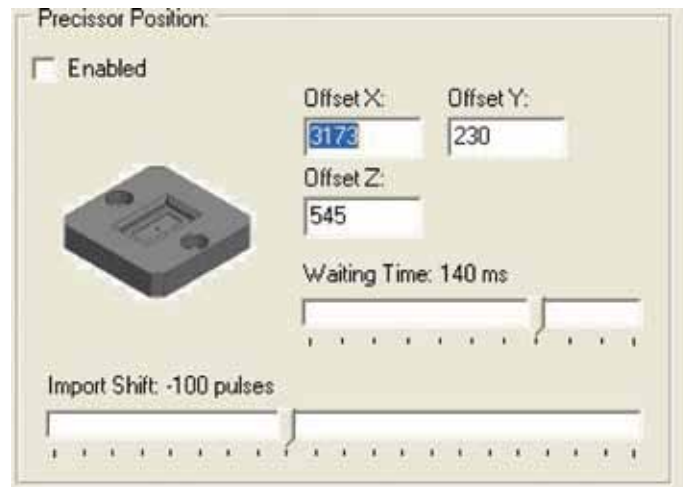
1. Turn off the software and power of AH-160 and replace Z-axis Vacuum Nozzle with the small one.



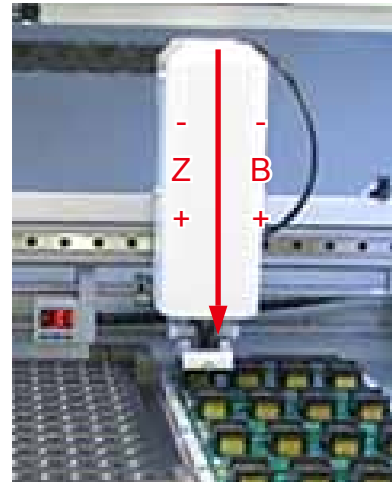
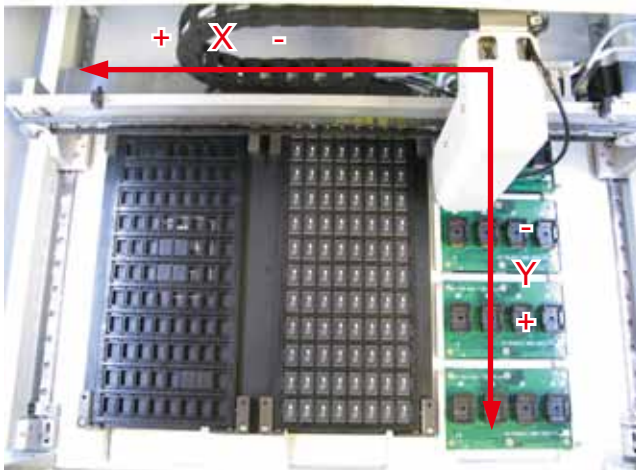
2. Turn on the power and software, and click"  "→"Motor Manager"→"Adjust" and it will show Layout Setting Form window. The mechanical arm will start initialization if the window pops up in connected status

3. Click"Station Layout".
4. Click "Precissor Position", "Offset X" and "Offset Y". And move the mechanical arm

to precursor position by using the low right side control panel of the window.



The Coordinate system as shown as the image below:




- Adjust "Offset X" and "Offset Y" and make sure the vacuum nozzle can insert into the positioning hole smoothly.



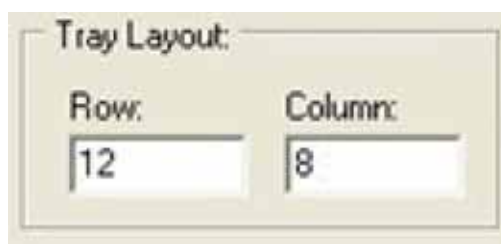
- Click "Save" after completing the set up.

6-2 Adjust parameters of Import and Export Trays

1. Turn off the software and power of AH-160. And replace the Z-axis vacuum nozzle and place the programming IC on the Precissor Position for adjusting.
2. Turn on the software and power, then click " "→ "Motor Manager"→ "Adjust" and it will show the window. The mechanical arm will start initialization if the window pops up in connected status .
3. Click "Load" for loading the file that is saved in the last chapter.
4. Click "Station Layout".
5. Click "Precissor Position", "Offset X" and "Offset Y". Then the mechanical arm will drive the X-axis and Y-axis to the Precissor Position.
6. Click "Offset Z" so that the Z-axis Vacuum Nozzle can touch the IC.




7. Click "Vacuum" , and the IC will be sucked.
8. Click "To Here", and the Z-axis Vacuum Nozzle will bring the IC back.
9. Click Tab "Tray Layout".
10. Adjust the Column and Row depend on the actual Tray Layout. Take TSOP48 Tray Layout for example, that is 12 Rows and 8 Columns.

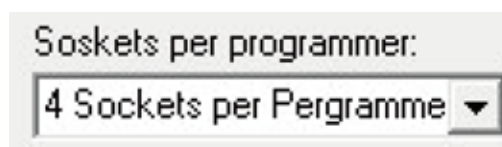


11. Set the position of the first IC on Import Tray. And click "First X" and "First Y" on "Export Tray Position" window and adjust it till mechanical arm move to the central of the IC.

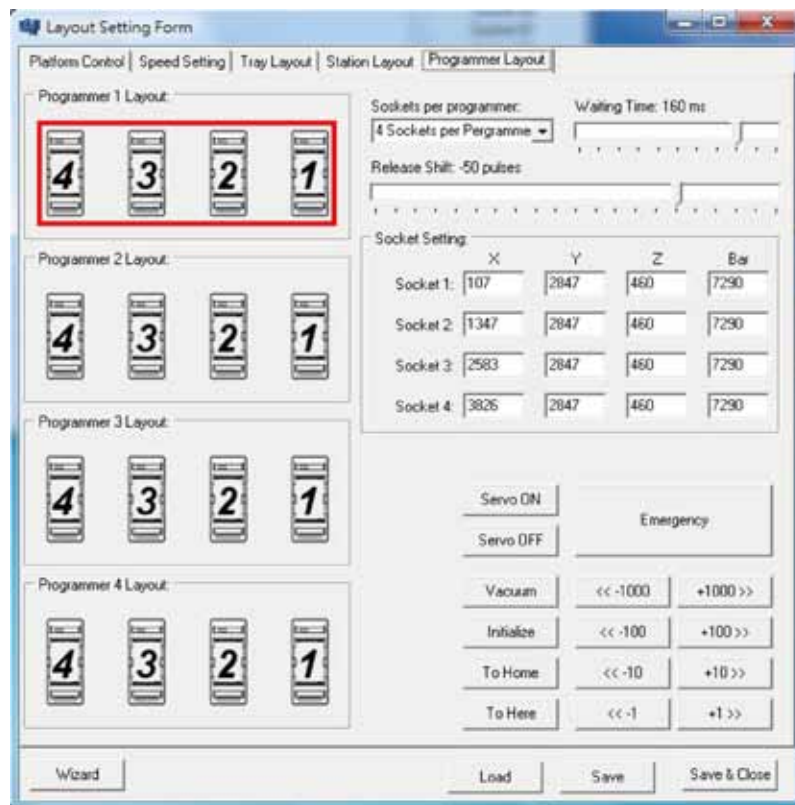
12. Click "Route Z" and adjust it till Z-axis and Vacuum Nozzle are lower enough, so that IC can touch the Export Tray.
13. Set the position of the the last IC on the Export Tray. And click "Last X" and "Last Y" to drive mechanical arm to central of the last IC.
14. Repeat step 11~13 for adjusting Import Tray position.
15. Click "Save" to save it.

6-3 Adjust the programmer parameters

1. Turn off the software and power of AH160. Then replace Z-axis Vacuum Nozzle and place programming IC on Precissor Position for adjusting.
2. Turn on software and power. Click " " → "Motor Manager" → "Adjust" and it will show the window. The mechanical arm will start initialization if the window pops up in connected status .
3. Click "Load" and loading the saved file in last chapter.
4. Click "Station Layout".
5. Click "Offset X" and "Offset Y" on Precissor Position window so that mechanical arm will drive X-axis and Y-axis to Precissor Position.
6. Click "Offset Z" so that Z-axis Vacuum Nozzle can touch the IC.
7. Click "Vacuum" and the IC on Precissor Position will be sucked.
8. Click "To Here" so that Z-axis vacuum nozzle can bring the IC back.
9. Click "Programmer Layout".
10. Check the amount of sockets on the "Sockets per programmer" field.




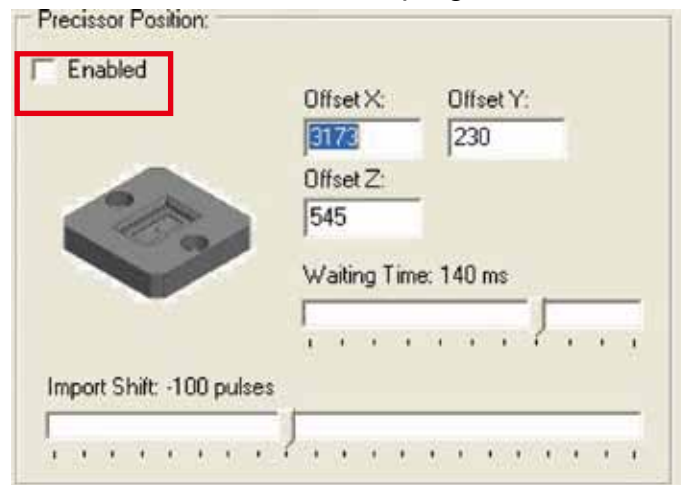
11. Click "Programmer 1 Layout", and the information will show on the right side "Socket Setting" field. As shown as the image below.



12. Set the position of IC on Socket 1. Click and adjust "X" and "Y" till the mechanical arm move to the central of socket 1.
13. Set the stroke of the first Bar, and make sure the open pressure will not deform pins and pin board. (Tips: You can use the same stroke of the same IC Bar to shorten the adjusting time.)
14. Click the Z field on socket 1 and adjust it so that Z-axis and Vacuum Nozzle can lower till IC and the bottom of Bar are touched. (Tips: You can use the same stroke of the Z-axis of the IC Bar to shorten the adjusting time.)
15. Repeat 11 step ~14 step for adjusting position of each programmer.
16. Click "Save" to save it.

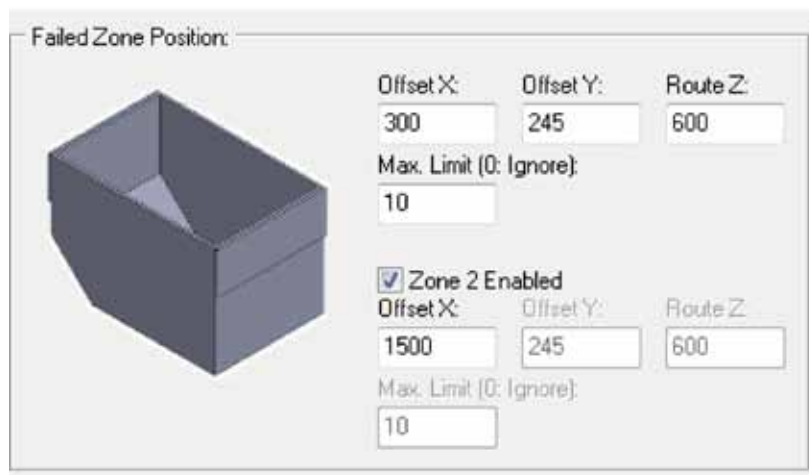
6-4 Set Up the Parameters of Precissor and Failed Zone

1. Turn on the power and software of AH-160. Then click"  "→ "Motor Manager"→ "Adjust" and it will show the window. The mechanical arm will start initialization if the window pops up in connected status .
2. Click "Load" and load the saved file in the last chapter.
3. Click "Station Layout".
4. Click "Precissor Position"→ "Enabled" on the field. You can decide whether the feed IC should be tuned by the Precissor or not, and then move them to the socket of programmer.(You don't need to click the "Enable" button to turn it on if the size of IC is small. That is, move the feed IC to programmer socket directly.)



Note : Turn on this may decrease the capacity and U.P.H. values but it can increase the accuracy for placing feed IC.

5. Set the parameters on "Failed Zone Position". (Tips: "Offset Y" is the Precissor



Position.)Set number 600 on "Route Z" and adjust "Offset X" depends on the size of IC. Click "Zone 2 Enabled" to expand the capacity for placing IC on Failed Zone.

Note : We don't suggest you choose this if the size of failed IC is large.

Chapter 7 Operating Procedures of AH-160

1. Connect the device with power and USB to the computer (the port is on the rear side of the device). Confirm the emergency switch is not pressed and turn on the power. The red light is on now(Disconnection). As shown as the image below.



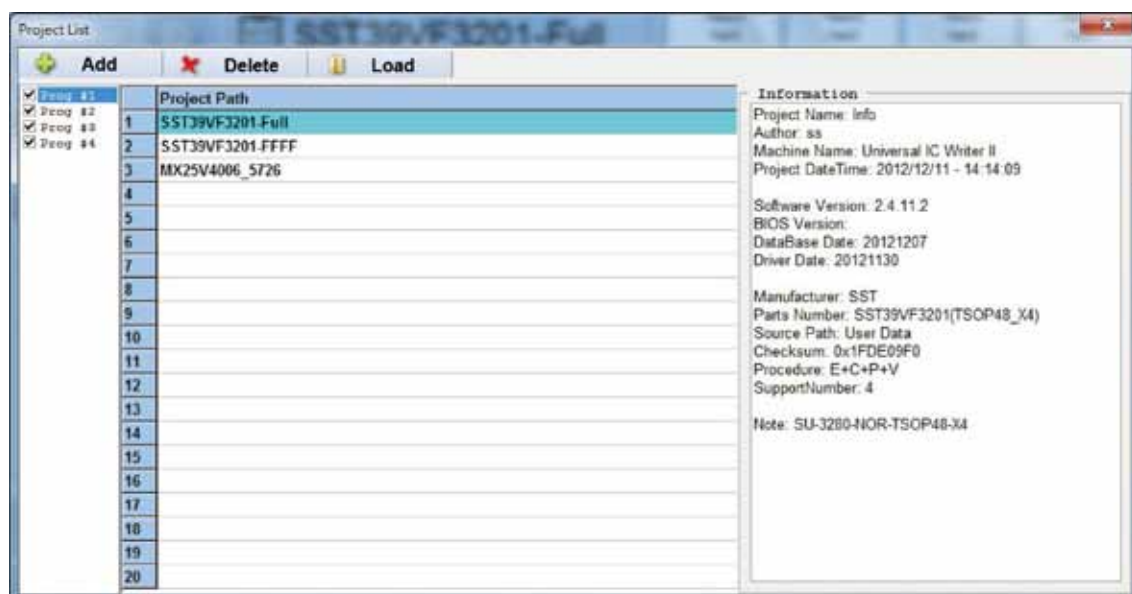
2. Open the upper cover of cabin door and push it to the bottom, just in case it falls and closed. Put in the Feed Tray and Out Tray with 30 degree angle and confirm the trays clung to the plane and ball plunger.



- Open the software, the window is as show as the image below. The machine will display yellow light which means successful connection. It will display READY on the socket status .



- Click "Project" and load to the programming file. The window is as shown as the image below.

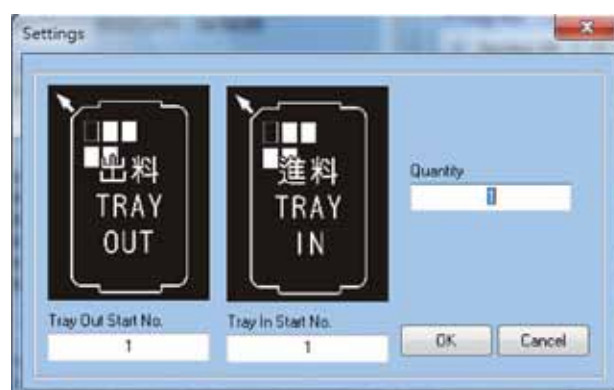


- Click "Add" then choose the file (*.lpprj) for loading, and click "Open" to complete it. You can refer to User's Manual of Universal IC Writer II.
- Click "Load" and download the project to programmer. Please close the window after completing the download. The result will display on the right side Sockets and the messages below. The loading is completed once all "Pass" shows on the right side.

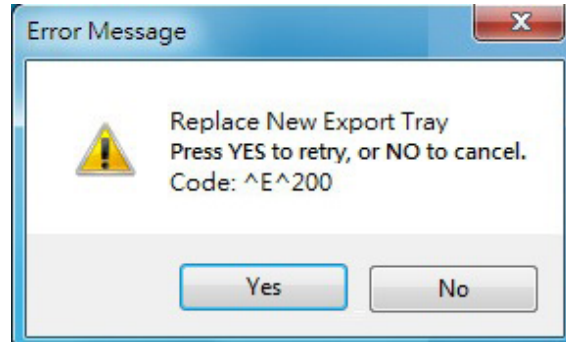


- Click "START" to operate the work order and it will show a small window. Then you can set "Tray Out Start No.", "Tray In Start No." And "Quantity" and press OK to start it. As shown as the image below.

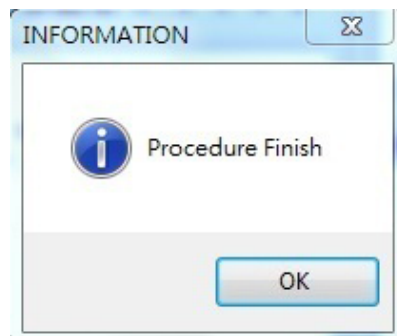
Note: Make sure the parameter is consist with the actual device before operating it. (The rows and columns of Import and Export Tray, the amount of sockets and the location of mechanical arm.)



8. The message of replacing Import and Export Trays may occurs in the process of operating the work order. At the same time, the yellow light will flash three times and the buzzer will buzz three times. The user should click "Yes" to continue or "No" to exit after replacing the trays.



9. The yellow light will flash twice and the buzzer will buzz twice after completing the work order.



Chapter 8 Simple Troubleshooting

8-1 Power

- Turn on the power but the red light doesn't flash.
Solution: Check the fuse is not burn out.



8-2 Motor

- The Vacuum Nozzle Bar repeat initialization.
Solution: Turn off the power, pull the bar to bottom and restart the software.
- The Motor Control doesn't response : Solution: Confirm the Export Tray and Import Tray are placed.

8-3 Pressure

- Vacuum formation failed :
Solution : 1.Make sure there is IC on the suck position.
2. Make sure the pump is open.
3. Make sure the height of Z-axis is correct.

8-4 Programmer

- Display "Fail" after loading the project:
Solution: Make sure the project is suit for the programming socket.
- The device doesn't response because of the long programming time:
Solution: The maximum of waiting time is twice from the official model IC specification. Therefore, you can judge the IC is abnormal or not from it.
- The programming failed rate is too high :
Solution: 1.Confirm the programming socket is installed correctly. 2. Check the height of Bar and confirm the socket is fully open by it.

Chapter 9 Description of Messages and Troubleshooting

9-1 Description of Messages and Troubleshooting

In this chapter we will explain the meaning of the message. There are three types of message and two types of action. As shown as the diagram below.

No	Type	Action	Note
1.	Normal Message	Display the window.	
2.	Warning Message	Display the window and stop the device.	
3.	Error Message	Display the window and stop the device.	

The Indicator Lamp and Buzzer will do the corresponding reactions as the below messages occurred.

No	Type	Status of Indicator Lamp and Buzzer	Note
1.	The device is working	Green light is on	
2.	The device is paused or standby	Yellow light is on	
3.	The device is not connected to the software	Red light is on	
4.	The warning messages occurred	Yellow light flashes 3 times The Buzzer buzz three times and stay on yellow light.	
5.	The wrong messages occurred	Red light flashes 3 times The Buzzer buzz three times and stay on red light.	
6.	The work order is completed	Yellow light flashes twice The Buzzer buzz twice and stay on yellow light.	

There are the details of all warning code, Warning Content ,and reason and solution.

Warning Code	Warning Content	Reason and Solution	Note
^E^200	Check the Import Tray	The IC on Import Tray is run out. You have to feed the IC into it. Please open the cabin door and replace the tray. You can click “yes” to continue or “no” to exit after closing the cabin door.	
^E^201	Check the Import Tray	The ICs on Import Tray are full. Please open the cabin door and replace it. You can click “yes” to continue or “no” to exit after closing the cabin door.	
^E^202	Check and clean up the Failed Zone	The Failed Zone is full. Please open the cabin door and clean up the ICs. You can click “yes” to continue or “no” to exit after closing the cabin door.	
:E:X01 :E:Y01 :E:Z01 :E:B01	The motor of the axis is on the positive limit.	Adjust the motor parameter and click “yes” to exit.	
:E:X02 :E:Y02 :E:Z02 :E:B02	The motor of the axis is on the negative limit.	Adjust the motor parameter and click “yes” to exit.	
:E:X03 :E:Y03 :E:Z03 :E:B03	The motor of the axis is not excited.	Motor error occur, and motor power will be shut down automatically. Click “yes” to exit.	
+E+002	Error of packet sending length.	Poor communication between PC and device. Click “yes” to exit.	
+E+003	Error of packet sending format.	Poor communication between PC and device. Click “yes” to exit.	

9-4 Wrong Messages

The device would stop the action when wrong messages occur. The warning messages window will pop up as attention to the user. The user should understand the cause and press the corresponding window button so that the device can process.

There are the details of all Wrong code, Wrong Content ,and Reason and Solution.

Wrong Code	Wrong Content	Reason and Solution.	Note
:E:X04 :E:Y04 :E:Z04 :E:B04	Motor operation failure	Motor is out of step. Please check whether the device is collided or not and click "yes" to exit.	
:E:X05 :E:Y05 :E:Z05 :E:B05	The photoelectric sensor of axis failure	The wire of hardware is abnormal,click"yes" to exit. Please contact with the maintenance personnel.	
@E@000	The Vacuum Nozzle formed failure	Please confirm there is IC on the position for nozzle. If yes, please move the IC to Failed Zone and click "yes" to continue or click "no" to exit. If it continuously occurred, please confirm the height of the nozzle.	
@E@002	The Vacuum Nozzle lifting failure. Click "Yes" to retry or "No" to close it.	Please move the IC on the Nozzle to Failed Zone and click "yes" to continue or "no" to exit.	
@E@100	The Cabnin Door is open	Please close the Cabin Door and click "yes" to continue or "no" to exit.	
@E@200	The Emergency Switch is start	Please untie the emergency switch and click "yes" to continue after re-homing of the device or click "No" to exit. You need to restart it after closing it.	
@E@400	The Import Tray is not installed.	Insert the Import Tray and close the Cabin Door. Then click "yes" to continue or "no" to exit.	
@E@500	The Export Tray is not installed.	Insert the Export Tray and close the Cabin Door. Then click "yes" to continue or "no" to exit.	
@E@900	The Import Tray and Out Tray are not installed.	Insert the Import Tray and Export Tray and close the Cabin Door. Then click "yes" to continue or "no" to exit.	